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AUTHOR	Kent, Laura
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ABSTRACT

The purposes and activities of the American Council on Education's Office of Research are reviewed, focusing on the overriding issue of the impact colleges have on their students. The Cooperative Institutional Research Program (CIRP), which constitutes the backbone of research activities of the office, is described with regard to its progress, conceptual framework, student information form, and collection and processing of data. Its regular studies are discussed, including impact studies, descriptive/normative ones, studies of the college environment, methodological studies, and theoretical ones. Special projects are also considered, such as those on the evaluation of the academic administration internship program; campus unrest and change; undergraduates, graduates, and faculty at American colleges and universities; disadvantaged students; open admissions at the City University of New York; and the effects of the dissemination of research findings. Information and data bank services are also outlined, and the uses of educational research are assessed. The final few pages are devoted to a listing of selected publications on the various studies. (LH)

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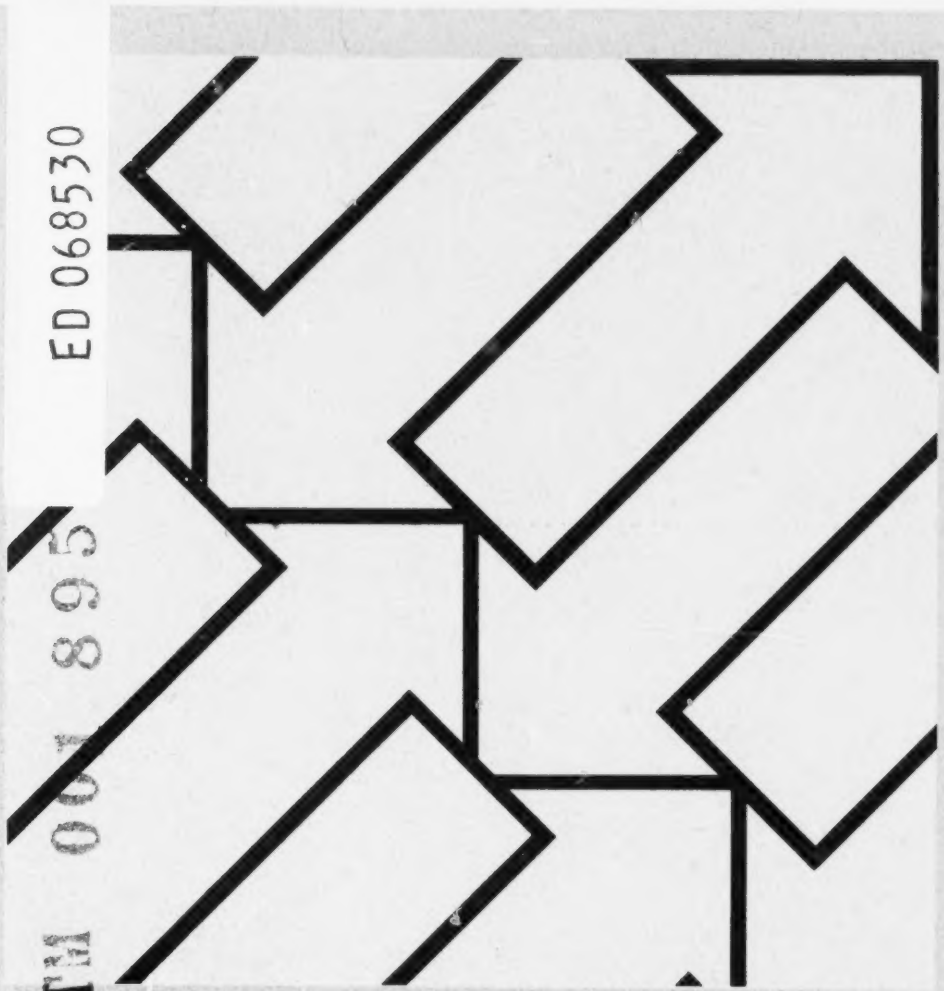

The ACE Office of Research

Its Purposes and Activities

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Prepared by Laura Kent
with the advice and
cooperation of the staff
of the Office of Research

Washington, D.C.,
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Introduction

Higher education has become a dominant thread in the fabric of our national life. Not only do more and more college-age students actually attend college, and not only has the baccalaureate become a ticket-of-entry to most "decent" jobs, but also our higher educational institutions—because of their physical and intellectual resources—have come to play a major role in the political, social, and economic affairs of our time. The ivy-covered walls have been breached, and the groves of academe invaded by the outside world.

Yet, despite their centrality, colleges and universities remain, to some extent, unknown territory. Although a mass of printed material—statistical abstracts, reports of research at single institutions, narrative accounts of events or programs at a particular college, polemics about the need for change and reform, defenses of the status quo—piles up on library shelves each month, we really have very little solid knowledge about the impact of the college on the development of the student. We lack a clear sense of precisely what the objectives of higher education should be (as the recent impassioned controversy over open admissions versus selective admissions demonstrates), and even when the objectives are defined, we are often ignorant of how best to achieve them.

The American Council on Education's Office of Research, established in 1965, was intended in part to remedy these deficiencies by undertaking large-scale longitudinal research on substantive problems in higher education. While retaining some of the more limited functions of its predecessor, the Office of Statistical Information and Research (namely, to provide technical advice to other Council staff and to synthesize statistical data collected by other agencies), its main thrust is at once broader and more incisive.

Essentially, the Office of Research seeks to answer one overriding question: What impact do colleges have on their students? In the past, educational researchers usually focused on the effects of college attendance versus nonattendance. But today, with universal higher education a goal within the national grasp, the focus has sharpened. Now researchers seek to learn how different types of institutions and different aspects of the college environment affect different students. This knowledge is essential if the highly valued diversity of our higher educational system is to be maintained and if, at the same time, we are to do the best job possible of educating the student so that he may realize his full potential and contribute meaningfully to society.

Unfortunately, our colleges and universities are still run largely on the basis of folklore, conventional wisdom about what makes a college "excellent," about what constitutes "good" and "bad" educational practice, about what aspects of the college encourage or inhibit the student's development. Take, for example, the common belief that the institution's chief influence on the student comes through its exposing him to "great minds": those of the past, in books, and those of the present, in the classroom. Little is said about how the student is affected by his fellow students; indeed, that influence is almost totally discounted in discussions of the values of higher education. Yet empirical evidence suggests it is the student's peers at an institution that have the greatest influence on his attitudes and aspirations.

Another common—and questionable—basis for educational decisions is anecdotal information. The reasoning involved runs something like this: "Such-and-such a practice worked at institution A, which is a small liberal arts college; we are a small liberal arts college too; therefore, such-and-such a practice will work here." Frequently, however, the underlying differences between the two institutions far overwhelm the superficial similarities, and the resultant decision turns out to be a poor one, benefiting neither the institution nor its students. In short, the value of anecdotal information is limited because it usually involves single cases and false analogies.

It should be emphasized that many of our pet notions about higher education may be perfectly true. The point is that, all too often, they are not only unproven but unquestioned. At many institutions, important and far-reaching decisions continue to be derived from untested and possibly erroneous assumptions and from faulty parallels. What is needed, then, is a firm base of empirical evidence from which to draw conclusions about the relation of educational environments and practices to student development.

The Office of Research seeks to establish such a base. By the end of 1971, it had collected data on close to two million undergraduates and former undergraduates, as well as on smaller numbers of graduate students and faculty members and on institutions themselves. These data have been extensively analyzed and widely circulated. Because the research program is under the aegis of a major national education organization, its findings have a better chance of reaching—and influencing—those persons responsible for making policy decisions about higher education.

It is entirely appropriate that the American Council on Education should be the parent organization of what has become, in six years, one of the largest and most comprehensive empirical research programs on higher education in the country. The Council is a nonprofit organization founded in 1918 to coordinate education, particularly higher education, and to serve as a liaison with the Federal government. Its current roster comprises nearly 1,600 institutional members (colleges and universities, professional societies, accrediting agencies, state commissions and boards of regents, and similar education groups) and 76 nonmember affiliates (public and private school systems, libraries, and educational fraternities and societies). As of October 1971, 38 percent of all regionally accredited junior colleges, 84 percent of all four-year colleges, and 100 percent of the universities were Council members. Member institutions are kept informed, through reports and other publications, of the Office's findings.

The Office of Research itself has grown into the second largest Council division in staff size. It is financed by ACE general funds (which consist of dues from the institutions and organizations that make up the Council membership and of general support grants from foundations and professional associations) and by project grants—from Federal and state agencies, foundations, and private organizations—awarded to the Office for special studies. The functions of the Office can be subsumed under three headings: research, information services, and data bank services.

Research

The Cooperative Institutional Research Program (CIRP) constitutes the backbone of the research activities carried out by the Office. This program, now in its seventh year of full-scale operation, has two major purposes. The first is to obtain descriptive information on the general population of entering freshmen. The second is to study the impact of college on the development of the student.

The CIRP has several advantages over earlier research efforts, which were often poorly designed, one-time studies of single institutions. One advantage is simply its size. Each year, about one in six freshmen entering colleges across the country fill out the ACE freshman questionnaire. Second, a large and diverse sample of institutions participate in the program, which is so designed that findings from this sample can be generalized to the entire population of institutions and students. A third advantage is the CIRP's longitudinal nature. Information is collected from students not at just one point in time but at several, by following up, through mailed surveys, subsamples of former entering freshman cohorts. Only through comparisons over time is it possible to determine how students change as a result of the college experience. Finally, through its individual reports to participating institutions (see pp. 20-24), the CIRP can have a more direct influence on educational policy than is true of most large-scale research programs, which usually produce only generalized reports.

Progress of the CIRP

Table 1 shows the progress of the CIRP since its inception. The general plan is as follows: The entire entering freshman classes of participating institutions are surveyed when they matriculate. Then, at subsequent intervals, subsamples of these same students are again surveyed. As the table indicates, a prototype study of 127,212 freshmen at 246 institutions was carried out in 1961; in the summer of 1965 (when these students would presumably have completed four years of college work and

Table 1

Progress of the Cooperative Institutional Research Program

Year of Entering Freshman Cohort	Number of Institutions	Number of Respondents	Year of Followup Surveys						
			1962	1965	1967	1968	1969	1970	1971
1961 (prototype)	246	127,212	X	X					X
1965 (pilot)	61	42,061							
1966	307	254,480			X		X	X	X
1967	359	280,650				X	X		X
1968	435	301,488					X		
1969	390	260,061					X		
1970	425	272,268							
1971	487	288,526							

received the baccalaureate), followup information was collected from 36,405 of the original sample, and the results were published in *The Educational and Vocational Development of College Students.* (For full publication information on this and other titles cited in the text, see the list of Selected Publications at the end of this report.)

At the Council, a pilot study was done in 1965; the following year, the CIRP went into full-scale operation. Through 1970, the Office selected a sample of approximately 15 percent of the nation's higher educational institutions and invited them to participate. In 1971, to accommodate requests from many institutions and to help defray the ever-increasing costs of the surveys, the CIRP was expanded, and virtually all U.S. institutions that have entering freshman classes and that respond to the U.S. Office of Education's Higher Education General Information Surveys were invited to participate. A minimum charge, plus a unit rate based on the number of questionnaires processed, is assessed.

A massive followup was carried out under the joint auspices of the Council and the Carnegie Commission on Higher Education in December of 1969, when questionnaires were mailed out to subsamples of the four preceding cohorts (1966, 1967, 1968, and 1969), as well as to graduate students and faculty members. (For a fuller discussion of this project, see pp. 16-17).

A four-year followup of the 1966 freshmen was undertaken in 1970. In 1971, two separate followups were conducted. Both had the basic purpose, common to all the followups, of collecting posttest data to determine college impact on academic progress, educational aspirations, and career plans or patterns; in addition, each had a special emphasis. The first, sent out in the summer of 1971 to a subsample of the 1967 cohort, was aimed at discovering the expectations and attitudes of those respondents planning to become elementary or secondary school teachers; it was funded by the Bureau of Educational Personnel Development of the U.S. Office of Education. The second, jointly funded by the National Science Foundation and the National Institutes of Health, was sent out in November of 1971 to subsamples, numbering around 60,000 each, of the 1961 and 1966 cohorts. Subjects from the former were about 28 years old and, presumably, embarked on their careers; those from the latter were likely to have completed the baccalaureate and to be settling their plans for the future. The special emphasis of this followup was to discover the impact of various types of financial aid on the student's academic plans and career choice and to record any changes that occurred between 1965 and 1970 (the years when the students from the two cohorts would presumably have finished college) in the proportions who go on to graduate school; the purpose was to learn how the sharp cutbacks in Federal scholarship and fellowship support—and the concomitant emphasis on aid through loans—have affected the desire and ability of students to attend graduate or professional schools.

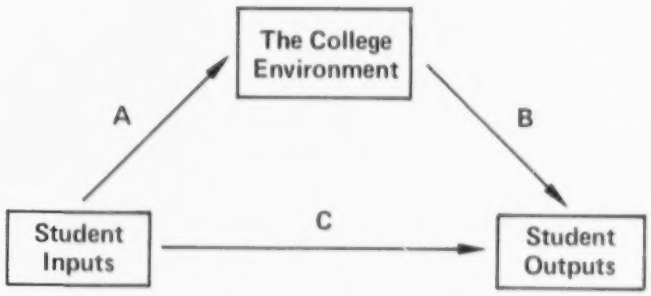
In addition to soliciting followup information directly from the students, the Office obtains from the registrar's office of each participating institution information on the student's retention status (i.e., whether he is still enrolled or has dropped out or transferred), college grade-point average, and achievement test scores. These registrars' reports serve a triple function. They provide a check on the accuracy of the information given by students, they furnish data not provided by the students themselves, and they give some idea of the characteristics of nonrespondents to followup surveys of former freshmen.

The Conceptual Framework

As a guide to understanding the rationale behind the CIRP, Figure 1 depicts the conceptual framework. The three components of the research model are:

Figure 1

The ACE Research Model



Presumably, going to college results in certain desirable outcomes for the student. These *student outputs* may be expressed in such high-flown and elusive terms as "ability to think critically," "appreciation of our cultural heritage," "development into a well-rounded human being." At a more practical level, they may be defined as involving entry into a high-paying and prestigious occupation, leadership in community and civic activities, mastery of a specialized subject matter, and so forth. The outcomes may be immediate (e.g., completion of the baccalaureate, election to Phi Beta Kappa, acceptance into graduate school), or they may be remote (e.g., overall career pattern, marriage and family life, long-term mental health). But whatever the particular criteria, it is assumed that the student changes over the college years and that the college influences these changes.

In the past, studies of college impact often centered on the achievements of an institution's graduates. For instance, many investigators used a college's Ph.D. productivity (that is, the proportion of its baccalaureate recipients who eventually obtain a doctorate) as a criterion of its effectiveness. Institutions that turned out large proportions of such students were regarded as being of high quality whereas those that turned out few such students were regarded as mediocre. Sometimes, an institution's quality was judged in even simpler terms: for example, the number of its graduates cited in *Who's Who*.

Now, however, it is recognized that such measures ignore initial differences (particularly with respect to academic ability) in the kinds of students attracted by different colleges. Thus, a college's selectivity (the average academic ability of its entering freshmen, as indicated by their scores on standardized tests) has come to be viewed as an all-important institutional characteristic, considerably more significant than, say, regional location or religious affiliation.

In short, before one can accurately assess the role that the college plays in effecting changes in the student, one must first take into consideration the potential of the student himself. This brings us to the second component of the research model:

Student inputs refer to the attributes and potentialities of the student when he enters college: family background, intellectual ability, special talents, aspirations, career plans, attitudes, and goals. Student input is, in a sense, the raw material that the institution has to work with. Only when the researcher knows what that raw material is can he accurately evaluate the finished product and thus assess the effects of the college. Thus, we come to the final component of the research model.

The college environment refers to all those aspects of an institution that are presumed to have some effect on the student's development. Included are such attributes as type (two-year college, four-year college, university), control (public or private; nonsectarian, Roman Catholic, Protestant), sex (coeducational, men's, women's), race (predominantly white, predominantly black), selectivity, administrative policies and practices, curriculum, physical facilities, geographic region, urban or rural location, and so forth. Assessment of the college environment is still in a somewhat primitive stage, and one of the goals of the research program is to identify those characteristics that do, in fact, influence student outcomes and develop accurate measures of them. To this end, some nontraditional measures of college environments, based on faculty- and student-derived data, have grown out of the program (see p. 13).

To turn back to Figure 1, we are primarily interested in the relationship indicated by arrow B. But before we can accurately evaluate the effect of the college environment on the outputs under consideration, we must have a thorough knowledge of the relationship indicated by arrow C: the student's characteristics at the time he enters college as compared with his characteristics after exposure to the college environment. (It should be pointed out that, even if there has been no change in a particular characteristic, it does not necessarily follow that the college has had no effect on that characteristic. In some cases, it may inhibit changes that would have occurred if the student had gone to another college or if he had not attended college at all. Moreover, this lack of change may be considered desirable by some institutions. For instance, a church-related college may feel that it has succeeded in its mission if the religious beliefs which its students held when they entered college do not alter during the college years.) In any event, the relation between student input and student output must be determined before the researcher can apply statistical controls in such a way as to isolate the effects of the college environment.

The scheme is made somewhat more difficult by the relationship indicated by arrow A. It can be translated as follows: The input characteristics of the students at a particular college make up an important part of the college environment. To put it even more simply, a student's development may be much more heavily influenced by his contacts with fellow students than by any other single factor: administrative policies, teaching practices, out-of-class contacts with faculty, library resources, or whatever. The relative importance of the peer environment (i.e., that aspect of the college which comprises the attitudes, abilities, interests, and behaviors of the students themselves) is another question being investigated in the research program.

Moreover, interaction effects as well as main effects must be examined, the point being that a particular college may affect different student differently. To take an example from the folklore, it is commonly believed that attending a highly selective institution is more beneficial to the student than attending a relatively unknown and presumably mediocre one; this represents a main effect. Further, it is believed that the superior student

benefits more from attending one of the "best" colleges than does the average student; this represents an interaction effect.

The Student Information Form

The main purpose of the annual survey of entering freshmen is to collect data on student input. The instrument used is the Student Information Form (SIF), a four-page questionnaire designed to be self-administered under proctored conditions and to be processed onto magnetic tape by an optical scanner. Many of the items of the SIF are essentially the same from year to year and are intended to elicit standard biographical and demographic information: e.g., sex; racial/ethnic and religious background; parents' income, educational levels, and occupations; high school activities and achievements; means of financing college education; degree aspirations; probable major field; career plans; attitudes on social and campus issues; life goals. Through the use of such repeated items, not only may successive cohorts of freshmen be compared to discover trends in the characteristics of entering students, but also the individual's responses on the SIF can be compared with his responses on followup questionnaires to see whether he has changed (for instance, in his political views or in his career plans) over the time interval.

In addition, certain items are added to the SIF as new areas of higher education come into prominence. In 1971, when open admissions and special programs for underprepared students were topics of special interest, the student was asked to indicate in which, if any, subjects he might need special tutoring or remedial work. (Besides its research value, this item was designed to help the institution in its planning of curricula and special services for students entering under newly adopted open admissions policies.) The 1972 SIF includes an item on the employment status of the student's mother, where previously the item had been limited to the father; this addition results from the new interest in the status of women. Thus, the SIF represents a compromise between two demands: the need for continuity from year to year to obtain comparable information and the need for flexibility to permit investigation of current issues in higher education.

Collection and Processing of Data

Each participating institution appoints a representative (usually an administrator or an institutional researcher) who is responsible for seeing that the SIF is administered under the proper conditions. The Office advises that (1) the questionnaire be completed during the registration or orientation period or the first week of classes, before the students have been exposed for long to the college environment; (2) it be administered in a proctored situation; (3) the person in charge make the purposes of the research program clear to the students; and (4) they be told that, insofar as the Council is concerned, completion of the questionnaire is voluntary. (An institution may, for its own purposes, make it mandatory for students to fill out the questionnaire; obviously, if data from a given institution are to have any value, it is desirable to get as close to 100 percent participation as possible.)

The institutional representative is also responsible for collecting the completed forms and sending them to the Council's data-processing service (an independent organization in Minneapolis) where they are optically scanned and recorded on magnetic tape; the questionnaires themselves are then destroyed. Finally, the institutional representative completes a report indicating the conditions under which the questionnaire was administered and any unusual circumstances or special problems encountered. He also estimates the number of first-time, full-time freshmen enrolled for that academic year, the number to whom the SIF was administered, and the number to whom it was not administered. If the last figure exceeds 5 percent of the entering freshmen, the Office staff attempts to ascertain why.

Four tape files are developed from the freshman survey each year. One contains the institutions' identification numbers and a summary of the responses of their students, tabulated separately for men and women. The second contains the responses of individual students plus an arbitrary identification number for each. The third contains the names and addresses of the students plus another, entirely different, identification number; this name-and-address file (stored with a data-processing service in this country) is maintained under stringent security regulations and released only long enough for mailing labels to be printed for followup surveys. (All followups are mailed directly to the student's home rather than being administered through the institution.) The fourth is a "link" file connecting the two sets of identification numbers. This last file is stored at an independent computer facility located outside the United States, where it is inaccessible not only to a third-party "snoopers" but also to the research staff itself. These elaborate arrangements are intended to assure the strict confidentiality of data from individual students and to protect against misuse of the name-and-address file.

Regular CIRP Studies

Out of the data collected and analyzed through the Cooperative Institutional Research Program have come a number of studies which may be grouped into five major categories: (1) impact studies, (2) descriptive/normative studies, (3) studies of the college environment, (4) methodological studies, and (5) theoretical studies. This section describes each category and cites examples of work completed, in progress, or planned. (See also the list of Selected Publications. A detailed report, *Studies in Higher Education: An Annotated Bibliography from the ACE Office of Research*, will be available by mid-1972.)

Impact Studies

The chief purpose of the research program is to investigate cause-and-effect relationships connected with higher education. Central to this purpose are *college impact studies*, which seek to determine how the institution as a whole, as well as specific aspects of its environment, affects student development. So far, cognitive and academic outcomes—the student's progress in college, his grade-point average (GPA), his degree aspirations, his career choice—have received the most attention. Findings from this group of studies suggest that our notions of what constitutes institutional "excellence" need revision. In particular, it is clear that those colleges and universities which rank at the top of the status hierarchy may be more adept at "picking winners," through selective admissions, than at educating their students. The evidence from one study, reported in the article "Undergraduate Achievement and Institutional 'Excellence,'" would seem to indicate that such traditional indices of quality as large per-student expenditures for educational and general purposes, a high proportion of doctorates on the faculty, small classes, and rich library resources have little effect on the student's intellectual growth.

Another finding with immediate implications for educational policy is that, although students at prestigious institutions tend to make lower grades than do their intellectual peers at less prestigious ones, they are somewhat less likely to drop out. It would seem, then, that much larger numbers of students who come from deprived backgrounds and whose high school grades and aptitude test scores are relatively low could be admitted to very selective colleges without appreciably increasing the attrition rates of such institutions.

Still another noteworthy finding—dubbed the progressive conformity hypothesis—is that a student's choice of major and of career come to resemble more and more the dominant or modal choices of his peers as he progresses through college. Thus, he will tend to move toward the major fields and career choices most popular at his institution or, if his initial choices were like those

of his fellow students, he will be confirmed in and stick to those choices.

Research tends to support the folklore about the effects of institutional size. Students who attend large institutions often feel alienated and dissatisfied. Consequently, they may lose their ambition to get an advanced degree and even drop out of college altogether.

Noncognitive outcomes have been the subject of some college impact studies. For instance, it has been found that, during the freshman year, students generally become more liberal in their attitudes toward student freedom and power. Different types of institutions, however, have different effects. Students attending two-year colleges grow more inclined to feel that the institution has the right to censor student publications and to ban controversial speakers. Public universities lower the student's academic motivation and conscientiousness but increase his satisfaction with the overall college experience, perhaps because they offer him a wider range of courses and more freedom to experiment. (Further research on aspects of the college experience that determine satisfaction is planned.)

Another article, "College Impact on Marriage," concluded that getting married during the college years is related to certain institutional attributes as well as to the student's personal characteristics. Students at highly selective institutions, at Roman Catholic institutions, and at institutions located in metropolitan areas are less likely to get married while in college than are students at other kinds of institutions. Contrary to what one would expect, coeducational institutions and "party schools" do not conduce to early marriage among their students.

Underlying all these findings is the discovery that the administrative characteristics traditionally used to describe institutions—e.g., type, control, size, affluence, geographic location—probably have less influence on student development than do certain more subtle attributes (identified through factor analysis and discussed on p. 13) such as a cohesive social atmosphere, cooperation or competitiveness among students, encouragement of independence, extent of informal and of organized dating, classroom behavior of instructors and students, leniency or severity of administrative policies toward student misbehavior, and so forth. Moreover the behaviors and attitudes of other students at an institution have a greater impact on the individual than do teaching practices, administrative policies, or contacts with the faculty.

Yet another group of impact studies, more narrow in scope, deal with *the effects of special educational programs.* In these days of innovation and change in higher education—e.g., the spread of open admissions, the emphasis on independent study, the growth of interdisciplinary curricula—it is essential that new programs be rigorously evaluated rather than simply accepted or rejected because they are new. Several projects sponsored by the National Science Foundation (the Undergraduate Research Participation Program, the Pre-College Student Science Training Program, and the College Science Improvement Program) have been scrutinized to determine just how effective each has been in fulfilling the purposes for which it was designed. The Office has also undertaken major studies of special programs in higher education for disadvantaged students (see p. 17) and of open admissions at the City University of New York (see pp. 17-18). Studies of the impact of special honors programs, special curricula, and cluster-college arrangements are planned.

The two types of studies mentioned above—college impact and the effects of special educational programs—are concerned primarily with college environmental effects on the academic and nonacademic development of the student. Yet a third group of impact studies, more miscellaneous in nature, deal with the

effects of factors that are not part of the college's formal academic program. Within this subcategory of *other impact studies* are included a number of the reports from the campus unrest and change project (see pp. 15-16): e.g., the characteristics that make an institution "protest-vulnerable," the role and influence of the faculty in campus unrest, and the effects of protest on faculty attitudes and morale.

Other "extracurricular" or "precollege" factors that may have some bearing on the student's educational progress and noncognitive development are his being a resident or a commuter, his working while in college, his delaying entrance to college, his being married, and his being a veteran. All of these factors have been, or are in the process of being, investigated.

Descriptive Normative Studies

The feature that best distinguishes descriptive/normative studies from impact studies is that the former make no causal inferences, they simply present descriptive material, although they may also interpret or comment upon it. Moreover, in most cases, they draw on data collected at a single point in time, an exception being *trends reports*, which trace similarities and differences over time in the phenomenon being described. Thus, though the administrator or policy-maker may derive valuable information from such studies, he should not make the mistake of thinking that they tell him anything about how the college affects student development.

At the end of each year, the Office publishes a national norms report on the characteristics of freshmen who entered college the previous fall. This publication is probably the most widely known and utilized of the descriptive/normative studies and is discussed more fully on pp. 19-20.

Because of the large size of the CIRP sample—over a quarter of a million students annually—it is possible also to examine various subgroups. Thus, descriptive studies have been done on Jewish freshmen, black students, junior college students, foreign students enrolled in American colleges, undergraduates enrolled in the sciences, undergraduates planning careers in medicine, and freshmen who are the children of clergymen. Faculty members and graduate students have also been the subject of such studies. Additional investigations of veterans, out-of-state students, American Indians, and married students are planned or are under way.

One article, "College Students' Attitudes Toward Social Issues," examined and compared the characteristics of entering freshmen in 1967, 1968, 1969, and 1970, with the purpose of noting whether changes in student attitudes and behaviors made campus protest more or less likely in the future. It was found that, over the period covered by the report, entering freshmen were becoming more polarized in their views, more inclined to favor student power and freedom, and more concerned with social and environmental questions. Further, there was an increase in the proportion of entering freshmen who had participated in a protest while in high school. All these changes suggest a growing proneness to social criticism and activism on the part of students. This particular study furnishes one example of how successive norms reports can be used to monitor trends in student input.

Similar trends studies of major field and career choice are now being carried out. Preliminary findings indicate that, in recent years, entering freshmen have grown less likely to select Engineering and Education majors and more likely to go into preprofessional fields. Concomitantly, the proportions who want to become doctors, dentists, nurses, other health professionals, and lawyers have increased, whereas the proportion who want to become elementary or secondary schoolteachers has dropped sharply (from 23.5 percent in 1968 to 15.4 percent in 1971). Such information is particularly helpful for manpower planning and for planning of stipend support programs.

Studies of the College Environment

These studies attempt to isolate those aspects of the higher educational institution that are crucial in shaping the student and in producing certain outcomes. The ACE data bank contains a fund of information on the administrative characteristics of institutions. In addition, considerable investigative work has been done using less orthodox measures.

Typically, the college environment has been assessed through the "image" approach, whereby the student is asked to report his impressions of the institution, or the "student characteristics" approach, whereby the environment is defined by the proportions of students majoring in different fields. Both these approaches have shortcomings in that the first is too subjective and the second too limited. Therefore, the Inventory of College Activities (ICA) was developed and administered to a subsample of the 1961 sample of entering freshmen (the prototype group) in the summer of 1962, when they had completed one year of college. This survey instrument uses a "stimulus" approach, a *stimulus* being defined as any behavior, event, or other observable institutional characteristic whose existence or occurrence can be confirmed by independent observation. Specifically, the student respondent is asked to indicate his activities and behaviors during the freshman year: e.g., the frequency with which he attended a concert, rode a bicycle, drank beer, argued with other students; the amount of time he spent studying, working at outside employment, sleeping; what went on in the classroom; what the administrative policies were toward various infractions of rules.

Factor analysis of the resulting data revealed 33 dimensions grouped into four categories: (1) the peer environment (interpersonal and noninterpersonal behavior), (2) the classroom environment, (3) the administrative environment, and (4) the college image. An institution's score on a particular dimension is the mean score of its students. Thus, a particular institution can be "profiled." There is available a *Manual for the Inventory of College Activities* that explains the various dimensions, as well as a book, *The College Environment*, which recounts the development of the ICA factors and makes explicit their relevance to institutional policy and educational research. Institutional profiles have been sent to student and administrative representatives on campuses participating in the CIRP (see pp. 22, 24).

Methodological Studies

Concomitant with its investigation of higher education, the Office is continually exploring, and reporting on, various facets of research methodology. Some of the studies in this group are intended for potential users of the ACE data bank facilities (see pp. 26-27). Others address themselves to the question of confidentiality and discuss alternative means of assuring the anonymity of respondents and institutions. One lengthy article treats the whole problem of the methodology of research on college impact: e.g., the special difficulties involved in carrying out multi-institutional longitudinal studies, dilemmas that may arise in inferring causal relationships, and the between-college and within-college approaches to educational measurement.

Moreover, a number of shorter articles have appeared on such topics as the reliability of questionnaire items, the accuracy of student self-reports, and the comparative results obtained using different statistical techniques in analyzing data. Through such studies, it is hoped not only that the Office's methods of assessing college effects will be steadily improved but also that other educational researchers will be benefited and a contribution to the whole of social science research be made.

Theoretical Studies

If the activities carried out by the Office of Research are to have an impact on educational policy, their bearing on the practical problems faced by administrators must be made clear. Several theoretical studies have concentrated on the application of empirical research findings, emphasizing that decisions in higher education should be based on the evidence rather than on folklore or anecdotal information. The policy-maker is responsible for defining the ends of higher education. The educational

researcher is responsible for discovering which of at least two alternative means will best bring about those ends. One must clearly distinguish between the specification of desired outcomes, an essentially nonobjective process based on value judgments, and the investigation of how these outcomes are influenced by the college environment or educational program, an essentially empirical process detached from subjective value judgments.

This is not to say, however, that the educational researcher must never take a stand. It is often difficult for those involved in a system to stand back from it and take a cold look at the realities: the assumptions upon which it is based, the role it plays in either maintaining the status quo or encouraging positive change, the direction in which it is heading. For this reason, the staff of the Office has often played gadfly to our higher educational system by drawing attention to certain of its aspects that may well be inconsistent with our stated national purposes. One way that this critical function has been implemented is through the use of multiple criteria that represent disparate or opposing objectives and values; the decision-maker thus becomes more aware of the implications of various policies and practices but is at the same time left free to choose among them. Another way has been to highlight research findings that reveal fallacies in the conventional wisdom on which many decisions are now based.

For instance, several papers have advocated open admissions, pointing out that much of the opposition to this rapidly spreading movement may be based on erroneous information about the supposed deleterious effects of such policies on the academic standards of the institution and on the morale of the students admitted. At the same time, the Office has strongly recommended that the adoption of open admissions be accompanied by compensatory and remedial programs for underprepared students, by improved counseling services, and by greater flexibility in the time allowed for the individual student to reach a given level of performance.

In several theoretical studies, the Office has raised questions about the hierarchical nature of our present system of higher education, which takes the shape of a pyramid: a few elite institutions at the top, a group of "good" but not "excellent" institutions in the middle, and a large number of presumably "mediocre" institutions at the base. The dangers inherent in such a structure are two. First, it is taken for granted that the "best" schools do, indeed, do the best job of educating their students, an assumption that empirical evidence challenges. Second, though the structure would seem to make for diversity and heterogeneity—both valued qualities—the pressure may actually be toward uniformity and homogeneity, since many of the institutions at the bottom of the heap seem to be trying to emulate the elite models. One recent book, *The Invisible Colleges*, argues that the small private college of low selectivity, limited financial resources, and a local rather than national reputation deserves more financial support than it is currently able to attract. This type of college is probably better equippped than are the already crowded state colleges to serve those very students whose desire for admission to college is now creating such heavy pressures.

Special Projects

In addition to studies that are part of the Cooperative Institutional Research Program, the Office undertakes various special projects, most of them funded by outside sources. Frequently, these projects employ techniques of data collection other than the large-scale survey, though they also draw on the extensive data files already built up through the annual freshman surveys and the followups.

Evaluation of the Academic Administration Internship Program

In 1966, the Council, under a grant from the Ford Foundation, initiated the Academic Administration Internship Program (AAIP) to identify persons interested in and qualified for academic administration and to train them by providing an internship experience that would help to develop their potential

(e.g., acting as assistant to the president of a college for one year). Simultaneous with the launching of the AAIP, the Office began research on its various aspects, the goal being to determine how well the program was fulfilling its objectives. Three reports covering the first three years of the program (1965-66 to 1967-68) have been published. They deal with (1) the characteristics of those ACE member institutions which chose to participate in the AAIP by nominating some person (usually a faculty member with administrative experience) who seemed to have unusual promise for a career in academic administration; (2) the characteristics of the nominees; (3) the evaluation and selection process used in choosing Fellows; (4) the characteristics of those chosen to be Fellows, as compared with those of nonwinners (i.e., those nominees not selected). In the third year (1967-68), the Fellows evaluated their internship experience and were in turn evaluated by four persons at the host institution, and the resultant ratings were analyzed and reported.

A final report in the series summarized findings for the first three years and gave additional findings from a Career Status Questionnaire sent out in the fall of 1969 to 106 former Fellows, 106 nonwinners, and 83 academic deans. Briefly, the career patterns of Fellows more closely resembled those of academic deans than of nonwinners. Not only were former Fellows more likely than were nonwinners to be holding administrative rather than faculty positions, but also they tended to be making higher salaries and to be more active in lecturing, consulting, publishing, and serving as mentors to other Fellows, though less active in civic affairs. From the overall evidence, then, the AAIP seems to be successful in achieving its stated objectives: The right nominees are being selected, the internship experience is usually rated as satisfactory, and the Fellows' careers following the internship experience seem to justify their having been selected.

Campus Unrest and Change

In 1968, the Office of Research began a study of campus unrest and change, funded by a three-year grant from the National Institute of Mental Health and a one-year supplementary grant from the Office of Education. The ACE study took a wider perspective than that of most of the literature on student protest and radicalism, which has usually been limited to anecdotal accounts of events at single campuses, armchair speculations about the causes of unrest, emotional attacks on—or defenses of—student activism, and (where empirical work has been done) analyses of the characteristics of protesters as opposed to those of nonprotesters.

Some of the reports that have come out of the project are (1) descriptions of the extent and nature of campus protest, the salient issues, and the tactics used, from the 1966-67 through the 1970-71 academic year; (2) analyses of the institutional characteristics that make a college or university "protest-vulternable." (3) analyses of faculty (e.g., their roles as participants, supporters, mediators, or opponents; the effects of faculty involvement on the course of protest; the effects of protest on faculty attitudes); (4) impact studies on the outcomes of protest, including both its immediate consequences (e.g., action taken by an institution or by civil authorities against demonstrators) and its long-range consequences (e.g., changes in institutional policies and practices in response to protest); (5) case studies of specific protests at 22 colleges and universities, based on accounts compiled by observers and on intensive interviews with administrators, faculty members, student government representatives, protesters, antiprotesters, and random students.

The long-range nature of the study (three years) made it possible to monitor trends in campus protest from its beginnings through 1970-71. Thus, for instance, it was noted that the issues of protest have gradually shifted from those directly connected with the institution (e.g., minority demands for the establishment of ethnic studies programs) to issues beyond the control of the

institution (e.g., environmental pollution, the Vietnam war). The student power issue has remained a fairly constant theme. Another conclusion reached after examining protests over a span of time is that 1969-70 was the most "atypical" and agitated year, what with the Cambodian invasion and the killings at Kent State and Jackson State. Moreover, news media to the contrary notwithstanding, the 1970-71 academic year was far from tranquil. Finally, in the earlier years, protest was confined more or less to the larger and more prestigious institutions but then spread to smaller and less selective colleges and universities.

One of the most unusual and ambitious reports to emerge from the project is *Protest Behavior and Response on the U.S. Campus*, based on a detailed analyses of the sequence of events in 103 protests at 67 institutions. The purpose of this study, which drew on campus newspapers for information, was to identify patterns and interrelationships of events in protest; special attention was given to isolating those antecedents that precipitate violence and to examining the effects of violence on subsequent events and responses. Through an elaborate coding system, and through multiple regression analysis, it was possible to trace causal patterns and to draw conclusions about what outcomes are likely to follow a given course of action.

A final report on the entire three years of the study is now under way. It will discuss the protest scene as a whole; the etiology, dynamics, and outcomes of protest; and some of the side effects of the project itself, which was attacked by both the New Left and the radical right, with the result that the Office encountered unusual difficulty in collecting data (particularly from interviews) and had to take special steps to ensure the anonymity of respondents.

Undergraduates, Graduates, and Faculty at American Colleges and Universities

In 1969, the Carnegie Commission on Higher Education and the Council cooperated in a massive survey that eventually resulted in data from approximately 81,000 undergraduates, 34,000 graduate students, and 50,000 faculty members at institutions participating in the CIRP. This survey—supported in part by funds granted to the Carnegie Commission by the U.S. Office of Education—is one of the most comprehensive ever undertaken, particularly with faculty and graduate students. Its overall purposes were to obtain a comprehensive view of U.S. higher educational institutions and to gather information that would help the Carnegie Commission in its task of formulating recommendations for public policy.

The 12-page undergraduate and graduate student questionnaires—besides including standard questions on demographic characteristics, college experiences, and educational and vocational patterns and plans—probed such areas as attitudes toward and satisfaction with the college, opinions on various contemporary issues, political leanings, and overall values. The intention was to explore such matters as the recruitment of students into various institutions, the character and distribution of student subcultures, and the validity of certain common views about today's students: Do they regard their studies as irrelevant to current social problems? Do they manifest humanitarian concerns and a strong desire to serve society? Are they resentful of in loco parentis doctrines? Do they feel their colleges are too impersonal? One particular advantage of this survey is that it includes graduate students, who were not previously covered by the CIRP; an ACE Research Report, *The American Graduate Student: A Normative Description*, presents a statistical summary of this sample.

The faculty questionnaire covered such areas as the social origins and characteristics of academic men and women; their training and career patterns; their allocation of time to the functions of teaching, research, and community service; their attitudes and orientations toward higher education as a whole; their concepts of their professions and of themselves as teachers and researchers; their views of academic freedom and institutional

authority; their opinions about student activism; and their broader social and political attitudes. *College and University Faculty: A Statistical Description* gives a comprehensive picture of this group. Another report, *Sex Discrimination in Academe*, shows that even when the differing educational backgrounds, degrees held, scholarly productivity, and teaching fields of men and of women are taken into account, women faculty members plainly come out on the short end in the matter of academic rewards: i.e., rank, tenure, and salary. Other studies of faculty based on data from this project are planned.

Disadvantaged Students

This project, financed by the Office of Economic Opportunity and carried out in collaboration with the University Research Corporation, focused on another topic of current interest: the disadvantaged student in higher education. Recently, institutions have been making greater efforts to recruit students who come from relatively poor families and whose high school preparation is often inadequate. In many cases, concomitant with recruitment efforts, special programs have been initiated to aid these students. It is imperative that the successes and failures of such programs be documented and that the academic progress of so-called high-risk students be traced. Only in this way can remedial and special programs be improved.

This project employed both the survey and the case-study approaches. Data from the ACE file of 1966 freshmen (who were followed up one year later) were used to compare disadvantaged students with students-in-general on their academic performance, educational aspirations, career plans, self-concepts, and types of institutions attended. Particular emphasis was given to the effects of different college environments on disadvantaged students. In addition, 19 institutions participating in the CIRP—all of them having some kind of special program for high-risk students—were studied in depth; interviews with administrators, faculty, and students (both those involved in such programs and those not involved) were conducted, and a survey was mailed out to over 3,200 students at these institutions.

Two books have come out of this project. *Educational Progress of Disadvantaged Students* presents preliminary findings. *Higher Education and the Disadvantaged Student* analyzes both the survey and case-study data, discusses specific issues that arise from the findings, and makes recommendations about programs for disadvantaged students, listing a number of guidelines to be followed in developing such programs.

Open Admissions at the City University of New York

In the fall of 1970, the City University of New York (CUNY) initiated an open admissions policy whereby any graduate of a New York City high school was automatically eligible to enroll at a campus of the university. This change in policy resulted in the admission of around 35,000 students, an estimated 8,000 of whom would not have been admitted under the previously existing selective admissions system whereby high school grades were used to screen out applicants.

Open admissions has become a hot issue, and though it has generated much rhetoric, there is little empirical evidence about how such a policy affects students and institutions. The CUNY experiment, then, offers a special opportunity to examine this question. Accordingly, in the fall of 1970, the Office of Research, in collaboration with the University Research Corporation, started work on a comprehensive investigation—financed by the Board of Higher Education of the City of New York and planned to extend for at least two years—of 15 of the 17 two- or four-year CUNY campuses. As a first step, pretest data on achievement were collected from students in the spring of 1970, and the Student Information Form (supplemented with items more directly appropriate to the study) was administered in the fall of 1970, when the students entered college. A followup was carried out in the fall of 1971 to assess changes in the student during his

first year of college. Further, faculty, administrators, and students (both those admitted under open admissions and those not) have been interviewed extensively. Some of the reports to come out of this project will be descriptive: of the decision-making process involved in changing to open admissions; of the implementation of this new policy on each of the 15 campuses in the study; and of the responses of freshmen, upperclassmen, faculty, and administrators.

One of the basic purposes of this project is to compare open-admissions students (i.e., those whose high school grades would not have permitted them to enroll at a CUNY campus prior to the fall of 1970) with "regular" students (i.e., those who would have been admitted through selective admissions). Specifically, it will seek to determine what impact the program has on the cognitive and noncognitive development of the two types of students and on other members of the academic community. A report on student attrition is also planned.

Ultimately, the Office hopes to ascertain under what conditions the academically disadvantaged student learns best; how his cognitive development is affected by such factors as remedial programs, counseling, grading practices, the attitudes of instructors, and his contacts with other students; and what effect college attendance has on his aspirations, self-concept, values and attitudes, and behavior.

The Effects of the Dissemination of Research Findings

Under a grant from the National Institute of Mental Health awarded in early 1972, the Office plans to begin the first year of a two-year study aimed at examining how various methods of disseminating research findings affect institutions. Drawing on both freshman and followup data from the files, this project will explore (1) the uses which institutions make of empirical research data, (2) the best means of assuring that research findings reach policy-makers and influence their decisions, and (3) the ultimate effects of the practical application of research on student outcomes.

Several experimental methods of disseminating information to institutions will be tested: Possible alternatives are on-site seminars and off-site conferences involving ACE staff members, and students, faculty, and administrators from the institutions selected to participate. As a control, various nondirective, routine, and traditional modes of feedback will be used on a matched group of institutions. The various techniques will then be compared with respect to their effects on the institutional program (e.g., mode of governance, curriculum, instructional practices), the social and intellectual climate of the college, and changes in students attributable to the college.

Information Services

A second major activity of the Office of Research is disseminating information to institutions, educational researchers, and the interested public on findings from the studies. Research data is valuable, of course, only insofar as it reaches those persons responsible for making the decisions about the policies and practices of our higher educational institutions. But it is not only the higher-echelon administrators and government officials who should be informed of empirical findings. Faculty members, college students, and people in general must also have this knowledge if they, in their turn, are to make wise and responsible choices. Therefore, many of the Office's publications are addressed to them rather than just to specialists in the field.

To give an example, *Predicting Academic Performance in College* is primarily a handbook for college-bound high school students and their parents and counselors, as well as for college admissions officers. It presents one set of tables that allow the student to convert his scores on any one of three national achievement tests used for college admissions to equivalent scores on any other. A second set of prediction tables enable him to assess, on the basis of his achievement scores, his chances of remaining in a given college. (The book also classifies U.S. colleges and universities on the basis of their selectivity, seven levels having been defined.) These tables even permit the student to estimate what his grade-point average is likely to be at a particular college. Such a guide is obviously much more useful than most of those now on the market, which are limited to giving administrative information and, occasionally, subjective impressions about institutions.

The staff of the Office of Research devotes a fair amount of time to spreading the word about the Cooperative Institutional Research Program itself: its nature, purposes, and design. A number of research reports, journal articles, and papers delivered at meetings of educational and allied associations serve this information function. Of course, in a sense, most of the reports discussed so far have this function. But, in addition, the Office provides a number of special information services.

ACE Research Reports

The Office began its own serial publication, the ACE Research Reports, in 1966, with the intention of disseminating findings from its research more rapidly than would be possible using other channels. The first of these was *A Program of Longitudinal Research on the Higher Education System*, which represents the initial statement of the goals of the CIRP. By the close of 1971, over 30 of these reports had been produced, appearing at irregular intervals; they include impact studies, descriptive/normative studies, methodological studies, and theoretical studies, in addition to reports designed to aid users of the ACE data bank facilities (see pp. 26-27). Routinely sent to a mailing list that includes college administrators, social scientists, educational associations, and other professional groups, the ACE Research Reports are available, at a charge, to other interested persons; a list of those in print, with the cost of each, may be obtained by writing to the Office of Research.

One number of each volume of the ACE Research Reports is devoted to the presentation of summary statistics on the characteristics of the freshmen who entered college that year. Appearing in December with information on the previous summer and fall enrollments, this annual national norms report consists chiefly of sets of tables, each of which presents data separately for men and women and for all freshmen. There are three such sets based on three different criteria of classification: (1) type of institution and control (two-year colleges, four-year colleges, universities; public and private); (2) geographic region (East, Midwest, South, and West); and (3) sex and racial composition (men's colleges, women's colleges, coeducational institutions; predominantly black colleges). These tables show the percentages of students responding to various item alternatives on the Student

Information Form. One can easily find, for example, what proportion of freshmen entering all institutions in the United States attended public high schools, or what proportion entering Protestant four-year colleges agreed that students should have a major role in specifying the curriculum. Based on the responses of students at institutions participating in the CIRP, the data are so weighted as to represent the entire population and thus to give an accurate picture of all entering freshmen in the country: their backgrounds, past behaviors, and attitudes. The text is limited to a description of the sampling design, weighting procedures, and other necessary technical matters; no description of what is in the tables and no interpretations are offered. The annual national norms reports serve as a rich storehouse of information about students, and, moreover, permit a variety of comparisons among different types of institutions.

Feedback to the Institution

Those institutions that agree to take the time and trouble to participate in the CIRP by administering the freshman questionnaire to their entering classes are, obviously, performing a valuable service to higher education as a whole. Reciprocally, the Office serves the participating institutions by providing them with rapid feedback about their own students. It is hoped that the data they receive will give them a detailed and accurate picture of "things-as-they-are" (rather than as the administrator feels they are or would like them to be) and thus will prove a useful—and a used—source of information for decision making.

The primary feedback comes in the form of an eight-page *report on entering freshmen*, returned to each participating institution before the close of the year. It should be emphasized that this information is a statistical summary; no data on individual students are released. A sample page from a 1971 institutional report is reproduced in Figure 2. First, the number of respondents to each item is given. The next three columns of figures show the percentages of freshmen at that institution checking each of the various alternatives to an item, with responses reported separately for men and women and for all students. The last three columns present comparable information for all institutions of the same type (two-year colleges, four-year colleges, universities). Thus, the administrator can see not only what his own freshmen are like but also how they differ from freshmen-in-general entering the same type of institution. Note, for instance, that the sample institution in Figure 2 is a four-year college, that its entering freshmen tend to come from relatively high socioeconomic backgrounds (as measured by parents' income and education), and that the institution enrolls only one-third as many minority students as does the average four-year college.

Another type of feedback to participating institutions comes from followup studies. For example, in the summer of 1967, subsamples of the 1966 entering freshmen were mailed a questionnaire that contained, among other things, items relating to their freshman year in college. They were asked whether they had had such experiences as falling in love, flunking a course, or changing major fields. They were asked whether they had engaged frequently, occasionally, or not at all in such behaviors as coming late to class, attending the ballet, writing for the campus newspaper or literary magazine, having a blind date, or participating in an informal group sing. The classroom environment was also the object of inquiry: Did the instructor call students by their first names? Were students assigned seats? Did the respondent openly argue with the instructor? In addition, they gave their judgment as to what administrative action (if any) would be taken against such behavior as being drunk, staying off campus over night without permission, or organizing a demonstration against some institutional policy. The college's atmosphere was rated in terms of such adjectives as "intellectual," "Victorian," "practical-minded," and "liberal." Finally, the respondents gave an overall evaluation of the college with respect to their own satisfaction or dissatisfaction.

Figure 2

Name of Institution

AMERICAN COUNCIL ON EDUCATION OFFICE OF RESEARCH
SUMMARY OF DATA ON ENTERING FRESHMEN (FALL 1971)

ITEM DESCRIPTION	NUMBER OF RESPONDENTS(*)	NAME OF INSTITUTION (PERCENTAGES) MALE	FEMALE	TOTAL	4-YR. COLLEGES NATL NORMS (PERCENTAGES) MALE	FEMALE	TOTAL
NUMBER OF STUDENTS	505	69.9	30.1	100.0	50.0	50.0	100.0
AGE BY DECEMBER 31, 1971	505						
16 Or Younger		.0	.0	.0	.1	.1	.1
17		.0	.0	.0	.1	.1	.1
18 18		3.1	7.2	4.4	3.0	4.8	3.9
19		83.3	90.8	85.5	75.3	81.6	78.6
20		12.5	1.3	9.1	16.4	11.3	13.9
21		1.1	.7	1.0	1.7	.9	1.3
22 25		.0	.0	.0	.6	.3	.4
26 Or Older		.0	.0	.0	2.2	.5	1.3
		.0	.0	.0	.8	.5	.7
FATHER'S EDUCATION	497						
Grammar School or Less		1.4	.7	1.2	8.3	7.6	8.0
Some High School		5.2	6.6	5.6	14.9	14.4	14.7
High School Graduate		22.3	19.9	21.5	30.2	28.9	29.5
Some College		13.3	13.2	13.3	16.6	17.4	17.0
Postgraduate Degree		23.1	27.8	24.5	10.8	11.7	11.2
MOTHER'S EDUCATION	500						
Grammar School or Less		1.4	.0	1.0	4.7	4.2	4.5
Some High School		6.0	2.0	4.8	12.7	12.2	12.5
High School Graduate		37.2	36.4	37.0	45.3	41.5	43.4
Some College		19.8	21.9	20.4	17.3	20.3	18.8
College Degree		30.7	31.1	30.8	16.2	17.6	16.9
Postgraduate Degree		4.9	8.6	6.0	3.7	4.2	4.0
RACIAL/BACKGROUND (1)	505						
White/Caucasian		96.9	94.7	96.2	89.5	88.5	89.0
Black/Negro/Afro-American		2.3	3.9	2.8	8.8	10.1	9.4
American Indian		.0	.0	.0	.e	.9	.9
Oriental		.0	.7	.2	.5	.4	.4
Mexican-American/Chicano		.0	.0	.0	.3	.3	.3
Puerto Rican American		.3	.0	.2	.4	.3	.3
Other		.6	.7	.6	1.0	1.0	1.0
ESTIMATED PARENTAL INCOME	486						
Less Then $4,000		1.5	.7	1.2	4.6	5.6	5.1
$ 4,000 - $ 5,999		1.2	2.8	1.6	6.5	7.3	6.9
$ 6,000 - $ 7,999		5.0	2.8	4.3	8.9	9.7	9.3
$ 8,000 - $ 9,999		6.4	9.8	7.4	11.6	11.9	11.8
$10,000 - $12,499		11.4	11.9	11.5	17.4	16.6	17.0
$12,500 - $14,999		14.9	13.3	14.4	14.6	13.6	14.1
$15,000 - $19,999		17.2	14.7	16.5	15.3	14.0	14.6
$20,000 - $24,999		15.7	16.1	15.8	8.5	8.6	8.5
$25,000 - $29,999		8.7	11.2	9.5	4.1	4.3	4.2
$30,000 - $34,999		7.6	4.9	6.8	2.6	3.0	2.8
$35,000 - $39,999		4.7	4.2	4.5	1.5	1.6	1.4
$40,000 Or More		5.8	7.7	6.4	4.3	3.8	4.0

Figure 3

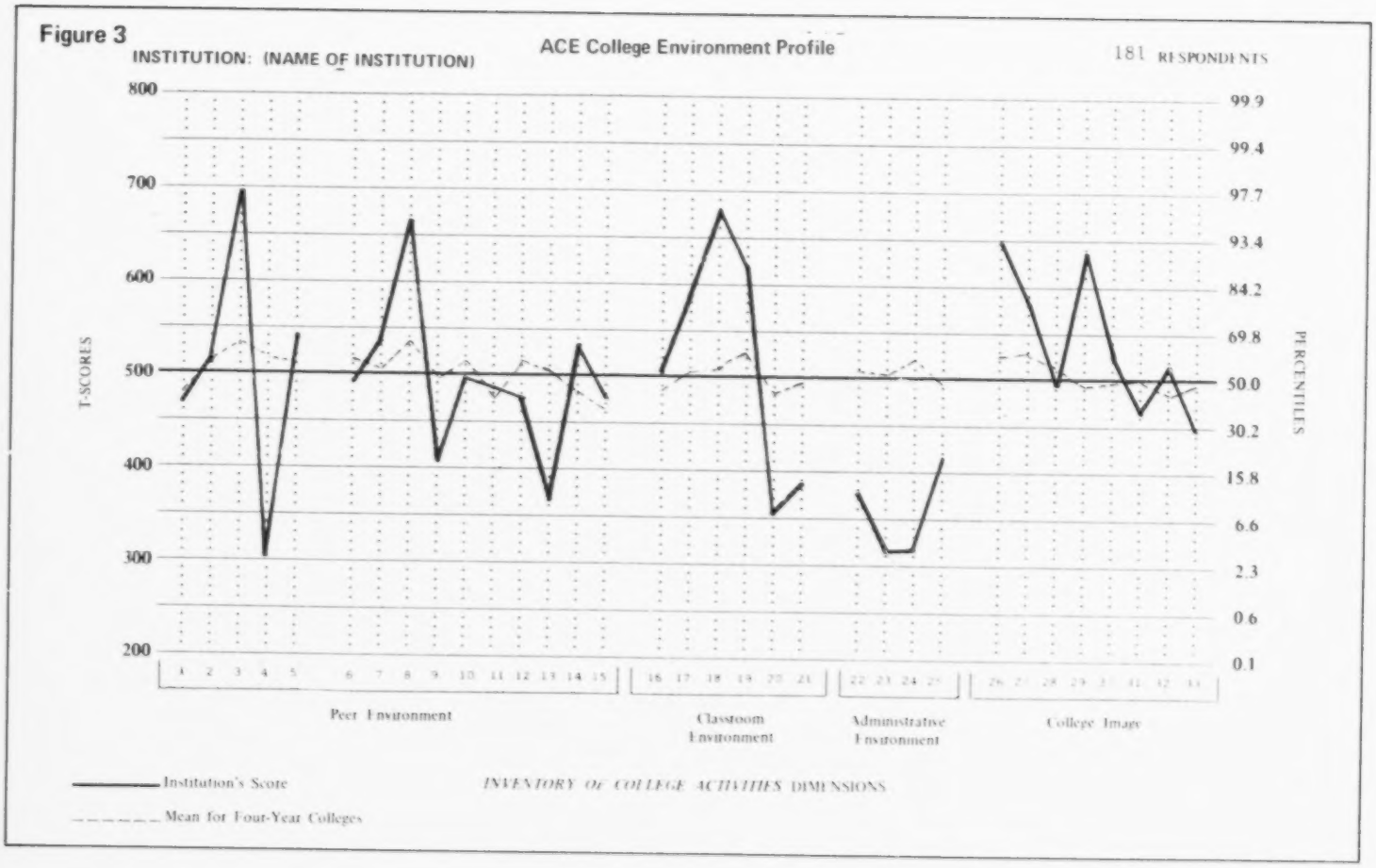

INSTITUTION: (NAME OF INSTITUTION)
ACE College Environment Profile
181 RESPONDENTS
800
700
600
500
400
300
200
T-SCORES
99.9
99.4
97.7
93.4
84.2
69.8
50.0
30.2
15.8
6.6
2.3
0.6
0.1
PERCENTILES
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
16 17 18 19 20 21
22 23 24 25
26 27 28 29 31 41 42 43
Peer Environment
Classroom Environment
Administrative Environment
College Image
Institution's Score
Mean for Four-Year Colleges
INVENTORY OF COLLEGE ACTIVITIES DIMENSIONS

Figure 4

AMERICAN COUNCIL ON EDUCATION
Cooperative Institutional Research Program
First Report On Four-Year Follow Up
Of 1966 Entering Freshmen

NAME OF INSTITUTION

	Men	Women	All Students
Returned for a Second Undergraduate Year			
Number of students for whom followup data were provided	101	143	244
Actual percentage returning for a second year	90.0	90.2	90.1
Estimated percentage from freshman data	81.0	82.6	81.9
Difference between actual and estimated percentages	+09.0	+07.6	+08.1

	Men	Women	All Students
Received Bachelor's Degree			
Number of students for whom followup data were provided	101	143	244
Actual percentage receiving degree	60.3	53.8	56.5
Estimated percentage from freshman data	53.7	55.4	54.7
Difference between actual and estimated percentages	+06.6	−01.6	+01.8

	Men	Women	All Students
Received Bachelor's Degree or Was Still Enrolled			
Number of students for whom followup data were provided		143	244
Actual percentage receiving degree or still enrolled	77.2	80.4	79.0
Estimated percentage from freshman data	58.9	69.2	65.0
Difference between actual and estimated percentages	+18.3	+11.1	+14.0

	Men	Women	All Students
Received Bachelor's Degree, Was Still Enrolled, or Had Had a Transcript Sent			
Number of students for whom followup data were provided	101	143	244
Actual percentage receiving degree, still enrolled, or requesting transcript	81.1	82.5	81.9
Estimated percentage from freshman data	84.8	89.1	87.3
Difference between actual and estimated percentages	−03.6	−06.6	−05.3

The institution was then sent a summary report that included an *institutional profile*. A sample is reproduced in Figure 3. The college environment is described according to the ICA dimensions (see p. 13), allowing the administrator to see not only where his own institution stands on each factor but also how it compares with other institutions of the same type. In the example shown, the institution scored far below the norm for four-year colleges on interpersonal peer environment dimension #4 and far above the norm on classroom environment dimension #20. An accompanying description of each of the ICA dimensions enabled the administrator to see that the environment at his college was lacking in cohesiveness—meaning, among other things, that the respondents reported having few close friendships with their fellow students, that they were exceptionally able academically, and that they rated themselves as unconventional and as valuing originality—and that the classroom environment was a highly organized one in which instructors assigned seats, took attendance, and held the class at a regularly scheduled time and place. Such information, particularly when presented in comparative terms, may give the administrator a fresh look at his institution, perhaps shaking up some of his assumptions about it and thus permitting him to make better decisions.

In the early part of 1972, institutions were sent a *dropout report* (see Figure 4) compiled from followup data provided by the institutional representatives. The initial survey of freshmen had been carried out in the fall of 1966; samples of these students were followed up in the winter of 1970-71. Four measures of a student's persistence in college were used: (1) returned for at least a second undergraduate year; (2) received the bachelor's degree (or, for two-year institutions, the associate's degree); (3) received the degree or was still enrolled for work toward the degree in fall 1970; and (4) received the degree, was still enrolled, or had had transcripts sent to another institution. Data were reported separately for men and women and for all students. By indicating the actual proportion of students, the expected proportion (as predicted from freshman input characteristics), and the differences between the actual and the expected rate, the report enabled the administrator to see how successful (by each of the four criteria) his institution was in retaining its students. In addition to the individual report, each institution was sent a copy of *College Dropouts: A National Profile*, a norms report showing the national figures on attrition. Thus, the administrator could also compare the dropout figures for his institution with those of all institutions in the same category (four-year college or university; two-year college) and thus assess the institution's relative effectiveness.

Higher Education Panel

One of the most recent additions to the Council's information services is the Higher Education Panel (HEP), which went into operation in late spring of 1971 under the auspices of ACE and with the funding of the National Science Foundation, the National Institutes of Health, and the Office of Education. HEP, which consists of over 500 colleges and universities, is designed for the rapid provision of otherwise unavailable information to policy-makers in higher education, government, and scientific agencies. It operates in the following manner. The organization requiring up-to-date information on such topics as enrollments, finances, salaries, degrees, policies, and staffing submits a question (if it is a government agency, to the National Science Foundation, which then decides whether to request formally that HEP carry out the survey; if it is a nongovernmental organization, such as a college or university, to the staff of HEP itself). An internal advisory committee consisting of representatives from educational organizations from the National Center for Higher Education then decides whether to carry out the survey, giving consideration to the following criteria: How important is the question to the higher education community as a whole? How

urgently is an answer needed? Is that answer not available from regular channels and published sources?

If the Advisory Committee decides that a question should be asked, a survey is undertaken. At each of the institutions that has agreed to participate (with the understanding that they will not be inundated with demands for information, that only questions that have direct pertinence to significant policy decisions will be asked, and that they will be given an early report of the findings), a primary "contact" person has been designated to gather the necessary data. For many surveys, only a subsample of participating institutions (e.g., men's colleges, predominantly black institutions, four-year liberal arts colleges) need be involved. In cases where time pressures are not great, the survey is simply mailed to the contact person. A telephone bank has been isntalled, however, and has been used by HEP in various ways: to get in touch with campuses immediately if the question is a particularly urgent one, to alert the contact person that a questionnaire is being mailed to him, or to follow up on institutions that are slow in responding to mailed questionnaires.

So far, a number of surveys have been successfully conducted, and questions continue to be submitted to the Higher Education Panel, which seems to be fulfilling its function of providing a fast turnover of information to policy-makers who must decide imperative questions.

Data Bank Services

All too often, research in higher education is hampered by the difficulties involved in obtaining the required data, a process that often demands the arduous and expensive tapping of a number of sources where the data are frequently in a form that the researcher must convert for his particular purposes. Not only is the expenditure of time and money prohibitive, but also such collection efforts often duplicate earlier efforts and thus unnecessarily strain the resources of institutions and erode the tempers of administrators asked to provide information.

The ACE data bank, therefore, is intended to serve as a resource for other educational researchers. There are several reasons why it may be useful to them in their work. First, it provides reasonably comprehensive and representative coverage of the national population of higher educational institutions. Second, it contains fairly complete information, by institution, on many aspects of higher education—relating both to institutions and to students—that are likely to be topics of research. Third, since the CIRP has been in operation for a full six years, it includes data that extend over time; furthermore, data from followups make it possible for the researcher to study causal relations.

The Institutional Research File

The one file that is now directly available to outside users is the Institutional Research file, which contains data on 2,319 institutions of higher education in the United States, identified by name but not by ACE code number. This file was built up by collating information from the Office of Education, the National Science Foundation, and several reference books published periodically by the Council, as well as data collected in the CIRP. First put together in 1968 and now in the process of being updated, the file contains the following kinds of information: summary statistics on the characteristics of entering freshmen; typological data (type, sex, race, control, and region); data on selectivity; financial data on the institution (but not on the students); data on earned baccalaureate degrees in 21 groups of major fields; and miscellaneous data on calendar plans, degrees held by faculty, tuition, foreign student enrollment, financial aid programs, residential arrangements, and library resources. The file may be purchased for $500. In progress is a file on exogenous factors—i.e., information on the community in which the institution is located—which will, when completed, also be directly available to outside users.

In-House Services

The educational researcher may also make use of the data on hand at the Council by requesting particular kinds of information through the GROSS (Generalized Routine for Obtaining Statistical Summaries) system, a software package developed to facilitate accessing the data files. Other files, in addition to the Institutional Research file just mentioned (which may be used for these in-house services as well as purchased outright) include aggregate information on undergraduates from both the freshman surveys and the followups. The reader can see what data are available from what years by referring back to Table 1. Note that the number of respondents shown in the table refers to the freshman surveys only; for followups, the N usually does not exceed 60,000. As a result of the massive ACE-Carnegie Commission survey (see pp. 16-17), data are also available on graduate students and faculty members.

The outside researcher can obtain frequency and percentage distributions, statistical summaries, and cross-tabulations, as his needs require. He simply specifies what these needs are, and the Office of Research itself will, for a fee, carry out the actual operation, with the understanding that the anonymity of students and of institutions will be protected. For fuller information, the reader should consult the *Users' Manual: ACE Higher Education Data Bank* or get in touch directly with the Office of Research.

To give some examples of the specific purposes for which outside researchers have drawn on the ACE data files, one large

statewide system requested a norms report that presented aggregate information for institutions at each level of the system (community colleges, state colleges, campuses of the university). A committee on Physics at one university wanted information on the characteristics of students majoring, or planning to major, in Physics; several professional associations representing specific disciplines have requested similar information. One state agency asked for aggregate financial data on students attending college in the state in order to make a policy decision about increasing tuition. A government agency has used the data bank to improve and update its computer-based student and allocation model. So far, the data bank services have been utilized chiefly by institutions, associations, and government agencies, but they are available to the individual researcher as well.

On the Uses of Educational Research

During the past few years, the nation's colleges and universities have been shaken by a crisis of confidence. Large numbers of their students have accused them of irrelevance, of an indifference to teaching and a lack of concern for the individual student, and even of carrying on activities antithetical to the explicit mission of higher education and to the values of our society. In turn, active—and sometimes destructive—student protest has provoked the ire of lawmakers, government officials, and citizens in general, with the result that our institutions find themselves under attack from both sides. In the face of conflicting criticism, where can the college administrator turn to find guides for decision making?

At many institutions, the current shibboleths are experimentation, innovation, and reform. The influx of new kinds of students; the introduction of such curricula as ethnic studies, futuristics, and special programs for the disadvantaged; the abolition of traditional grading practices; the relaxation of parietal rules; the increased participation of students in governance—all of these are the phenomena of change. But too often it is change for change's sake, a blind response growing out of a desire to tranquilize our restless campuses rather than out of a clear sense of purpose or a firm knowledge of the effects of specific changes. Other colleges and universities, reluctant to give the impression of yielding to pressures exerted by what they perceive to be a minority of discontents, cling to their traditional practices even when it has become plain that many of these practices simply do not serve the needs of the present, with its rapidly changing social, economic, and technological conditions.

Neither response is satisfactory. What is required is a kind of skeptical enthusiasm, a readiness to try out new things coupled with a willingness to evaluate continuously. To a large extent, the folklore has failed us. This is not to say that we must throw out all our intuitions and assumptions but merely to emphasize that we must question and test them. The conventional wisdom undoubtedly contains much that is valid and valuable; it remains to separate the true gems from the dross. We must have sound empirical data on which to base educational decisions and to assess both old and new policies and programs. And underlying this experimentation and assessment must be a firm conviction about objectives. The current crisis carries with it the opportunity for self-scrutiny, for a careful survey of the direction in which we are heading, for a redefinition of the goals of higher education.

A much closer partnership is required between the policy-maker and the researcher. Unfortunately, there has heretofore been a failure of communication between the two. All too frequently, social science research—including educational research—has addressed itself to questions that are either trivial or remote from the concerns of the college administrator. Moreover, even when the results of such research go beyond the obvious, even when they have a direct bearing on educational practice, they often exist in a vacuum. They may be read by other researchers, they may be the subject of brisk though brief controversy in the professional journals, but they do not reach the proper audience: the people who might put them into action. Educators continue to rely on the same old assumptions, without reference to whatever empirical evidence exists.

The social scientists and educational researchers are themselves largely to blame for this unhappy situation, chiefly because they tend to write for their colleagues rather than for the policy-maker who, however well educated, may have little knowledge of—or interest in—the methodological scaffolding that supports a particular study and who may be justifiably irritated by the poor writing that characterizes too much of the literature. In addition, the researcher is often unwilling to spell out the practical implications of his findings, to indicate how they might be applied to the day-to-day operation of an institution, or even

to suggest possible interpretations and alternative explanations that might open up promising avenues of thought to those in positions of authority. It is of crucial importance, therefore, that the educational researcher keep his primary audience always in mind.

Equally important, the two partners in the enterprise must have a mutual understanding of the responsibilities of each. It is not within the purview of the researcher to stipulate the ends of education, nor can he be held entirely responsible for what is done (or not done) with the findings of his research. It is the college administrator, the educational planner, the government official, and ultimately the public itself, who must make the decisions about the goals of higher education and the application of research findings. The job of the educational researcher is to undertake investigations of meaningful problems, to see to it that his methodology is valid, and to make clear his conclusions and their implications. In addition, he can perform the critical function of making sure that the decision-maker is aware of the values underlying particular policies and programs. Frequently, this may entail direct challenge of some of the premises that govern decision making.

With these ends in mind, then, the Office of Research has attempted to address itself to real and vital questions, to collect data that will reflect national trends and patterns, to analyze these data in methodologically sound ways, and to assure that the findings reach those responsible for making policy decisions. In the six years of its existence, the Office has accumulated a vast fund of information for its own research and for use by outside investigators. It has also come up with some answers that have had a direct impact on the academic community. The hope is that these answers will be helpful not only to college and government officials but also to students, faculty members, and others concerned with higher education. Not the least of its goals is that, through its research program, the Office may educate the educators to the values of basing their decisions on the best evidence. For their part, educators can aid the Office by helping to identify outstanding problems, by offering suggestions for the interpretation of findings, and by providing feedback about the pertinence of the research results to their particular purposes and needs. Through such interchange between policy-makers and researchers, the ultimate objective of improving the higher educational system can be achieved.

Selected Publications

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